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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/653,821	09/03/2003	Nathan Lee Gray	1171/41357/134	4123

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EXAMINER

HOOK, JAMES F

ART UNIT	PAPER NUMBER
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3754

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/653,821

Applicant(s)

GRAY, NATHAN LEE

Examiner

James F. Hook

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 4, and 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dryden (258) in view of Hughes and Gray. The patent to Dryden discloses the recited limb for a breathing circuit comprising a very thin walled conduit as seen in figure 4, a first connector 32, a second connector 13, an elongate reinforcing member 31 lying freely within the thin walled conduit along a slightly torturous path as seen in figure 4 where the reinforcing member is hollow which passes through the two connectors in a blind manner, the member is small and too small for gas delivery to the patient but large enough to be used as a feedback conduit, from one end of the conduit to the other end and connected with the first and second connectors, where the connectors are provided with bumps which are a rib for engagement with a helical rib of the breathing conduit, a shoulder formed by the rib, where the reinforcing member 31 would inherently provide some reinforcement to the duct and would do so to some

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degree against contraction. The patent to Dryden discloses all of the recited structure with the exception of having the reinforcing element non-torturous and the connectors having helical protrusions and recess for a securing collar. It is considered old and well known in the art to provide a recess for a securing collar on a connector and such would be an obvious choice of mechanical expedients over a connector not provided with one, where such would prevent failure. The patent to Hughes discloses that it is old and well known in the art to form hollow reinforcement member 18 to be non-torturous when provided in a thin walled conduit 12 provided with a helical rib. It would have been obvious to form the ribs on the connectors of helical ribs to allow for a helically corrugated pipe to connect thereto and to form the tube in a non-torturous manner as suggested by Hughes as such is an alternate embodiment for hollow reinforcement elements in thin walled tubes and such would allow for a simpler construction thereby saving money using less materials and to allow for faster connection of the ends to the hose saving on manufacturing costs. The patent to Gray teaches that it is old and well known in the art to form two flexible layers 20,30 with a helical reinforcement 40 for use in conveying air, where such can be made having a thickness of 0.00055 inches which converts to 13.97 microns, where it is not clear whether this is the actual thickness of the entire conduit or of one of the two layers, however two layers would equate to almost 28 microns in thickness, which is less than a wall thickness of 50 microns. It would have been obvious to one skilled in the art to modify the tube in Dryden to have walls of any thickness desired including less than 50 microns as suggested by Gray where such sets forth known equivalent thicknesses of hoses of the same structure and

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for the same type of use, and where such would provide for a lighter hose if thickness were restricted.

Claims 1, 2, 5, 7, 8, 14-16, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Darling in view of Gray. The patent to Darling discloses the recited limb for a breathing circuit comprising a very thin walled conduit as seen in figure 1, a first connector 42, a second connector 44, an elongate reinforcing member 24 lying freely within the thin walled conduit along a non torturous path as seen in figure 1, from one end of the conduit to the other end and connected with the first and second connectors, the reinforcing member is solid and substantially circular in cross section and two ends, the reinforcing member contains a resistance heating element 20, cords 22 are also provided which are non-elastic within the reinforcing member which would make it resilient and not plastically deform, and the method of providing such is also set forth. The patent to Darling discloses all of the recited structure with the exception of various dimensional and stiffness values for the elements, however, such is considered merely a choice of mechanical expedients to use routine experimentation to arrive at optimum values as such only requires routine skill in the art to optimize values using routine experimentation and choices of mechanical expedients. The patent to Gray teaches that it is old and well known in the art to form two flexible layers 20,30 with a helical reinforcement 40 for use in conveying air, where such can be made having a thickness of 0.00055 inches which converts to 13.97 microns, where it is not clear whether this is the actual thickness of the entire conduit or of one of the two layers,

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however two layers would equate to almost 28 microns in thickness, which is less than a wall thickness of 50 microns. It would have been obvious to one skilled in the art to modify the tube in Darling to have walls of any thickness desired including less than 50 microns as suggested by Gray where such sets forth known equivalent thicknesses of hoses of the same structure and for the same type of use, and where such would provide for a lighter hose if thickness were restricted.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Darling in view of Gray as applied to claims 1, 2, 5, 7, 8, 14-16, and 19 above, and further in view of Dickenson. The patent to Darling as modified disclose all of the recited structure with the exception of utilizing a positive temperature coefficient heating element. The patent to Dickenson discloses that it is old and well known in the art to provide hoses with heating elements including resistance type, and positive temperature coefficient heating elements as such are equivalent types of heaters used in hoses. It would have been obvious to one skilled in the art to substitute a positive temperature coefficient heating element for the resistance heating element of Darling as modified, as suggested by Dickenson as such are taught to be equivalent types of heaters for hoses and such would provide different benefits to a standard resistance heating element thereby making the hose more useful and thereby save money.

Claims 17, 18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Darling in view of Gray as applied to claims 1, 2, 5, 7, 8, 14-16, and 19 above, and further in view of Moseley. The patent to Darling as modified discloses all of the recited structure with the exception of providing a cover layer over the spiral

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reinforcement that is made of a braided sheath of PET fibers. The patent to Moseley discloses that it is old and well known to form corrugated conduits of layers over spiral reinforcing wires where the layers can be formed of woven or braided PET yarn. It would have been obvious to one skilled in the art to provide an outer sheath formed of braided PET fibers to the hose of Darling as modified, as suggested by Moseley where such is an alternative material used over spiral reinforced conduits to protect them from damage and thereby reduce replacement costs and save money.

Response to Arguments

Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection. With respect to the arguments directed at Dryden and Darling not teaching the limitation of "reinforcing said conduit against contraction along the length of said conduit" such is not persuasive where the reference to Darling clearly sets forth discussion of the member 24 is formed of conductors 20 and restraining cords 22 sheathed in a reinforced tube to limit radial extension of the tube, which sets forth that the structure of this member is such that it would inherently have some resistance to contraction along the length as well, and therefore would at least provide some reinforcement against contraction. The reference to Dryden would similarly provide at least some resistance to contraction along its length as well as such would be inherent to any structure provided in the longitudinal direction when the materials used would inherently have at least some resistance to compression inherently in the material itself. There are very few materials in existence that wouldn't

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at least provide some degree, not matter how small, of reinforcement against contraction, and the materials utilized in the references to Dryen and Darling are not of a structure that would be so limp as to not afford some reinforcement against contraction.

Conclusion

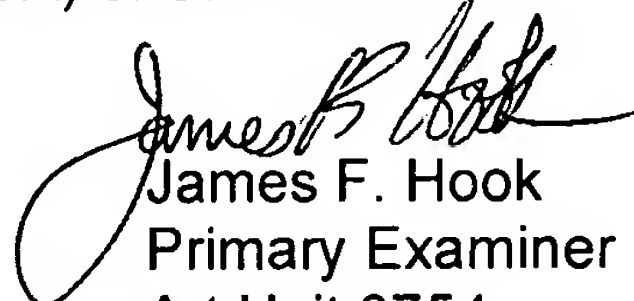
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The references to Smith, Roberts, and Huber disclosing state of the art reinforced hoses.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James F. Hook whose telephone number is (571) 272-4903. The examiner can normally be reached on Monday to Wednesday, work at home Thursdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Shaver can be reached on (571) 272-4720. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


James F. Hook
Primary Examiner
Art Unit 3754

JFH